Parameter Name	Description	Range	Units	Reference
Core				
nrKillingCaseation	Number of killings for a compartment to become caseated	[7, 20]	Number	[28, 30-32, A, B]
caseationHealingTime	Time it takes for a caseated compartment to heal	[610, 1535]	Timesteps	[28, 30-32, A, B]
caseationStatFraction	Fraction to use when determining if a cell is in a caseated region	[0.12, 1.0]	Compartments/ Moore Neighborhood	[28, 30-32, A, B]
thresholdApoptosisTNF	TNF threshold for TNF-induced apoptosis	[926, 1366]	Unitless	[28, 30-32, A, B]
kApoptosis	Rate of apoptosis happening	[1.3e-6, 2.04e-6]	1/second	[28, 30-32, A, B]
minChemotaxis	Minimum of Chemotaxis sensitivity range	[0.4, 0.6]	Molecules	[28, 30-32, A, B]
maxChemotaxis	Maximum of Chemotaxis sensitivity range	[385, 566]	Molecules	[28, 30-32, A, B]
Macrophage				
initDensity	Initial density of macrophages on the gridspace	[0.00051, 0.022]*	Unitless	[28, 30-32, A, B]
movementRest	Time required for a resting macrophage to move one micro-compartment	[2, 4]	Timesteps	[28, 30-32, A, B]
movementAct	Time required for an activated macrophage to move one micro-compartment	[15, 23]	Timesteps	[28, 30-32, A, B]
movementInf	Time required for an infected macrophage to move one micro-compartment	[136, 211]	Timesteps	[28, 30-32, A, B]
dIL10Act	Secretion rate of IL10 by an activated macrophage	[0.05, 0.3]	Molecules/second	[28, 30-32, A, B]
dTGFBInactive	Secretion rate of inactive TGF-β by a macrophage	[1.05e-4, 0.99]*	Molecules/second	[B]
thresholdNFkBTNF	TNF threshold for NFkB activation	[50, 86]	Molecules	[28, 30-32, A, B]
kNFkB	Rate of NFkB activation	[8.6e-6, 1.3e-5]	Fraction	[28, 30-32, A, B]
probKillExtMtbRest	Probability of a resting macrophage to kill extracellular bacteria	[0.09, 0.15]	Unitless	[28, 30-32, A, B]

fKillExtMtbRest	Fractional increase of a resting macrophage to kill extracellular bacteria when STAT1 or NFkB pathways are on	[0.15, 0.24]	Unitless	[28, 30-32, A, B]
nrExtMtbNFkB	Number of extracellular bacteria for NFkB activation in an infected macrophage	[201, 299]	Bacteria	[28, 30-32, A, B]
nrIntMtbCInf	Number of intracellular bacteria necessary for an infected macrophage to become chronically infected	[10, 15]	Bacteria	[28, 30-32, A, B]
nrIntMtbBurstCInf	Number of intracellular bacteria necessary for a chronically infected macrophage to burst	[18, 30]	Bacteria	[28, 30-32, A, B]
nrExtMtbUptakeAct	Number of extracellular bacteria an activated macrophage can uptake and kill	[4, 6]	Bacteria	[28, 30-32, A, B]
tgfbActivationFraction	Fraction of latent TGF-β activated by a macrophage	[1.1e-5, 9.5e-2]*	Unitless	[B]
TGFBmax	Max amount of TGF-β for inhibiting bacterial killing by macrophage	[1.1, 800]*	Molecules	[B]
probHealCaseation	Rate constant for wound healing	[0.0046, 0.02]	Unitless	[28, 30-32, A, B]
tgfbBindingRate	Fraction of active TGF-β that is bound by mac	[1e-3, 9.6e-2]*	Unitless	[B]
T cell				
probMoveToMac	Probability of a T cell moving into a compartment already containing a macrophage	[0.035, 0.055]	Unitless	[28, 30-32, A, B]
proliferationTime	The time interval from the time a T cell is stimulated to proliferate to the time a daughter cell is produced	[38, 142]	Timesteps	[28, 30-32, A, B]
TGFBmax	Max amount of TGF-β for inhibiting T cell proliferation	[0.12, 0.5]	Molecules	[B]

tgfbBindingRate	Fraction of active TGF-β that is bound by a T cell	[0.00013, 0.048]*	Unitless	[B]
γ-producing T cells				
probApoptosisFasFasL	Probability of Fas/FasL induced apoptosis by a γ-producing T cell	[0.03, 0.04]	Unitless	[28, 30-32, A, B]
probTNFProducer	Probability that a γ-producing T cell can produce TNF	[0.042, 0.07]	Unitless	[28, 30-32, A, B]
Cytotoxic T cells				
probKillMac	Probability of a cytotoxic T cell killing a chronically infected mac	[7.1e-3, 9.97e-3]	Unitless	[28, 30-32, A, B]
probKillMacCleanly	Probability of a cytotoxic T cell killing a chronically infected mac cleanly	[0.6, 0.89]	Unitless	[28, 30-32, A, B]
Regulatory T cells				
dTGFBtreg	Secretion rate of inactive TGF-β by regulatory T cell	[1.2e-4, 9.8e-1]*	Molecules/second	[B]
probTregDeactivate	Probability of successful downregulation by a regulatory T cell	[0.006, 0.0098]	Unitless	[28, 30-32, A, B]
Recruitment				
timeRecEnabled	Time after which T cell recruitment is enabled	[3037, 4971]	Timesteps	[28, 30-32, A, B]
timeMaxRecDelay	Time after which maximum T cell recruitment is enabled	[794, 1179]	Timesteps	[28, 30-32, A, B]
Macrophage recruitment				
maxRecProb	Maximum probability of recruiting a macrophage (scales recruitment function)	[0.001, 0.028]*	Unitless	[28, 30-32, A, B]
thresholdRecChemokine	Threshold of macrophage recruitment for chemokines	[0.702, 0.997]	Molecules	[28, 30-32, A, B]
thresholdRecTNF	Threshold of macrophage recruitment for TNF	[0.0091, 0.015]	Molecules	[28, 30-32, A, B]
recruitmentHalfSatTNF	Half-saturation parameter for macrophage TNF-dependent recruitment	[1.3, 1.98]	Molecules	[28, 30-32, A, B]
recruitmentHalfSatChemokine	Half-saturation	[1.8, 2.6]	Molecules	[28, 30-32,

	parameter for macrophage chemokine-dependent recruitment			A, B]
γ-producing T cell recruitment				
maxRecProb	Maximum probability of recruiting a γ-producing T cell (scales recruitment function)	[0.021, 0.2]	Unitless	[28, 30-32, A, B]
thresholdRecChemokine	Threshold of γ-producing T cell recruitment for chemokines	[0.06, 0.089]	Molecules	[28, 30-32, A, B]
thresholdRecTNF	Threshold of γ-producing T cell recruitment for TNF	[1.01, 1.59]	Molecules	[28, 30-32, A, B]
recruitmentHalfSatTNF	Half-saturation parameter for T cell TNF-dependent recruitment	[1.01, 1.59]	Molecules	[28, 30-32, A, B]
recruitmentHalfSatChemokine	Half-saturation parameter for T cell chemokine-dependent recruitment	[1.53, 2.4]	Molecules	[28, 30-32, A, B]
probCognate	Probability γ-producing T cell will be cognate when recruited through recruitment by probability	[0.021, 0.85]*	Unitless	[28, 30-32, A, B]
Cytotoxic T cell recruitment				
maxRecProb	Max probability of recruiting a cytotoxic T cell (scales recruitment function)	[0.021, 0.15]	Unitless	[28, 30-32, A, B]
thresholdRecChemokine	Threshold of cytotoxic T cell recruitment for chemokines	[3.6, 5.3]	Molecules	[28, 30-32, A, B]
thresholdRecTNF	Threshold of cytotoxic T cell recruitment for TNF	[1.01, 1.5]	Molecules	[28, 30-32, A, B]
recruitmentHalfSatTNF	Half-saturation parameter for T cell TNF-dependent recruitment	[0.9, 1.5]	Molecules	[28, 30-32, A, B]
recruitmentHalfSatChemokine	Half-saturation parameter for T cell	[7.03, 9.93]	Molecules	[28, 30-32, A, B]

	chemokine-dependent recruitment			
probCognate	Probability cytotoxic T cell will be cognate when recruited through recruitment by probability	[0.02, 0.9]*	Unitless	[28, 30-32, A, B]
Regulatory T cell recruitment				
maxRecProb	Max probability of recruiting a regulatory T cell (scales recruitment function)	[0.011, 0.096]	Unitless	[28, 30-32, A, B]
thresholdRecChemokine	Threshold of regulatory T cell recruitment for chemokines	[1.5, 2.5]	Molecules	[28, 30-32, A, B]
thresholdRecTNF	Threshold of regulatory T cell recruitment for TNF	[1.3, 1.98]	Molecules	[28, 30-32, A, B]
recruitmentHalfSatTNF	Half-saturation parameter for T cell TNF-dependent recruitment	[1.8, 2.7]	Molecules	[28, 30-32, A, B]
recruitmentHalfSatChemokine	Half-saturation parameter for T cell chemokine-dependent recruitment	[1.2, 1.8]	Molecules	[28, 30-32, A, B]
probCognate	Probability regulatory T cell will be cognate when recruited through recruitment by probability	[0.021, 0.89]*	Unitless	[28, 30-32, A, B]

References not present in the main manuscript but included here in the supplement:

A. Pienaar E, Cilfone NA, Lin PL, Dartois V, Mattila JT, Butler R, Flynn JL, Kirschner DE, Linderman JJ. A computational tool integrating host immunity with antibiotic dynamics to study tuberculosis treatment. *Journal of theoretical biology*. (2015) **367**:166-179. doi:10.1016/j.jtbi.2014.11.021.

B. Warsinske HC, Pienaar E, Linderman JJ, Mattila JT, Kirschner DE. Deletion of TGF-β1 increases bacterial clearance by cytotoxic T cells in a tuberculosis granuloma model. *Frontiers in Immunology*. (2017) **8**:1843. doi:10.3389/fimmu.2017.01843.